(19) World Intellectual Property Organization International Bureau





(43) International Publication Date 1 September 2005 (01.09.2005)

PCT

(10) International Publication Number WO 2005/080944 A1

(51) International Patent Classification⁷: G01N 15/14, G06F 19/00, G06K 9/00, G06T 7/20, 7/60

(21) International Application Number:

PCT/GB2005/000558

(22) International Filing Date: 16 February 2005 (16.02.2005)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data: 0403611.7

18 February 2004 (18.02.2004) GB

(71) Applicant (for all designated States except US): THE UNIVERSITY COURT OF THE UNIVERSITY OF GLASGOW [GB/GB]; The Gilbert Scott Building, University Avenue, Glasgow Strathclyde G12 8QQ (GB).

(72) Inventors; and

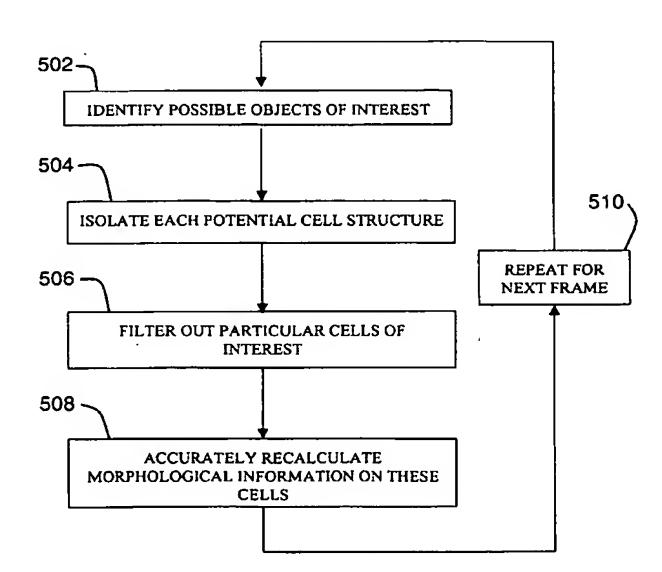
(75) Inventors/Applicants (for US only): GREEN, Richard, Benjamin [GB/GB]; Flat 1/2, 30 White Street, Glasgow Strathclyde G11 5RW (GB). GILLIES, Eric, Augustine [GB/GB]; Flat 3/R, 101 Clarence Drive (3/R), Hyndland,

Glasgow Strathclyde G12 9RL (GB). CANNON, Richard, McHugh [GB/GB]; Flat 5, 1 Princes Garden, Glasgow Strathclyde G12 8HP (GB). PACEY, Allan, Anthony [GB/GB]; 63 Burns Road, Sheffield, South Yorkshire S6 3GL (GB).

- (74) Agents: NAYLOR, Matthew et al.; Mewburn Ellis LLP, York House, 23 Kingsway, London Greater London WC2B 6HP (GB).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),

[Continued on next page]

(54) Title: ANALYSIS OF CELL MORPHOLOGY AND MOTILITY



(57) Abstract: Determination of the morphology and motility of a population of cells in vitro is possible via a series of steps. The cells are imaged using a microscope and camera. A first frame of image data allows identification of parts of the image data corresponding to a cell or cells of interest. Cell morphology is determined from this data. A second frame of image data, captured subsequent to the first, allows the determination of the relative displacement of the cell or cells of interest. This provides motility data. The invention has particular application in male fertility investigations.



•

005/080944 A

WO 2005/080944 A1



European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:

Ý

— of inventorship (Rule 4.17(iv)) for US only

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.